

P1 1173029

REC'D 24 MAY 2004

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# THE UNITED STATES OF AMERICA

**TO ALL TO WHOM THESE PRESENTS SHALL COME:**

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office

May 21, 2004

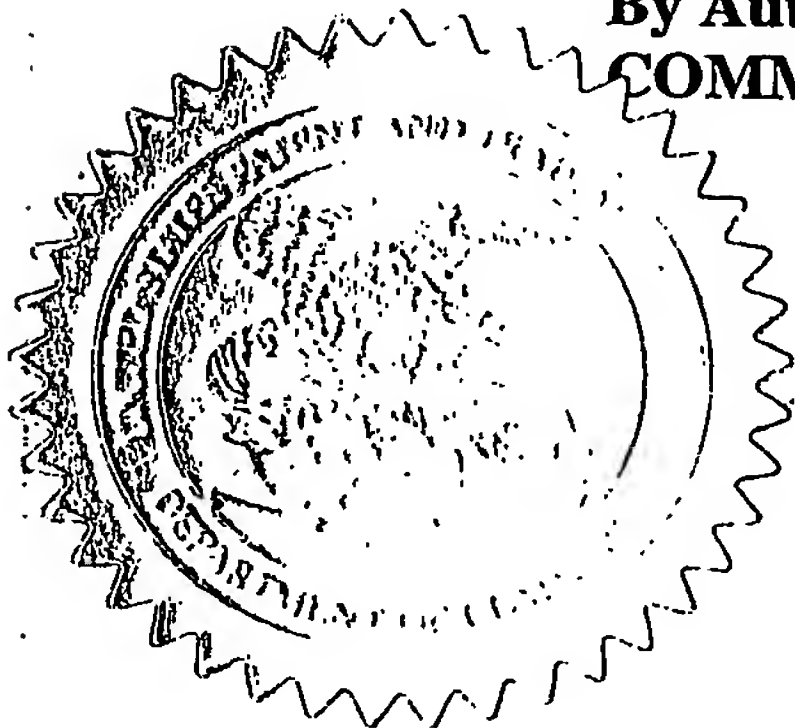
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APPLICATION NUMBER: 60/495,654

FILING DATE: August 15, 2003

RELATED PCT APPLICATION NUMBER: PCT/US04/06562

By Authority of the  
COMMISSIONER OF PATENTS AND TRADEMARKS



N. WOODSON  
Certifying Officer

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PTO/SB/16 (02-01)  
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# PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53 (c).

Express Mail Label No. EL 995079263 US

## INVENTOR(S)

Given Name (first and middle [if any])	Family Name or Surname	Residence (City and either State or Foreign Country)
Carl	Christensen	South Jordan, Utah USA

☐ Additional inventors are being named on the next separately numbered sheets attached hereto

## TITLE OF THE INVENTION (280 characters max)

BROADCAST ROUTER WITH MULTIPLE EXPANSION CAPABILITIES

## CORRESPONDENCE ADDRESS

Direct all correspondence to:

☐ Customer Number

OR

Type Customer Number here

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<input checked="" type="checkbox"/> Firm or Individual Name	JOSEPH S. TRIPOLI, THOMSON MULTIMEDIA LICENSING INC.				
Address	PATENT OPERATIONS.				
Address	P. O. BOX 5312				
City	PRINCETON	State	NJ	ZIP	08543-5312
Country	USA	Telephone	609-734-6805	Fax	609-734-6888

## ENCLOSED APPLICATION PARTS (check all that apply)

☒ Specification Number of Pages

1

☐ CD(s), Number

☐ Drawing(s) Number of Sheets

1

☐ Other (specify)

☐ Application Data Sheet. See 37 CFR 1.76

## METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT (check one)

☐ Applicant claims small entity status. See 37 CFR 1.27.

☐ A check or money order is enclosed to cover the filing fees

☒ The Commissioner is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number:

07-0832

FILING FEE  
AMOUNT (\$)

160

☐ Payment by credit card. Form PTO-2038 is attached.

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

☒ No.

☐ Yes, the name of the U.S. Government agency and the Government contract number are: \_\_\_\_\_

Respectfully submitted,  
SIGNATURE

Francis A. Davenport

Date

August 15, 2003

TYPED or PRINTED NAME

FRANCIS A. DAVENPORT

REGISTRATION NO.  
(if appropriate)

36,316

Docket Number:

PU 030245

TELEPHONE 609 734-6805

## USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

This collection of information is required by 37 CFR 1.51. The information is used by the public to file (and by the PTO to process) a provisional application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 8 hours to complete, including gathering, preparing, and submitting the complete provisional application to the PTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, D.C., 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Box Provisional Application, Assistant Commissioner for Patents, Washington, D.C. 20231.

17613 U.S. PTO  
60/495654

12538 U.S. PTO  
08/15/03

# FEE TRANSMITTAL for FY 2003

Patent fees are subject to annual revision.

Complete If Known

Application Number	N/A
Filing Date	HEREWITH
First Named Inventor	Carl Christensen
Examiner Name	N/A
Group / Art Unit	N/A
Attorney Docket No.	PU 030245

TOTAL AMOUNT OF PAYMENT (\$ 160

## METHOD OF PAYMENT (check one)

1. ☐ The Commissioner is hereby authorized to charge indicated fees and credit any over payments to:
- Deposit Account Number: 07-0832
- Deposit Account Name: THOMSON multimedia Licensing Inc.
- ☒ Charge Any Additional Fee Required Under 37 CFR 1.16 and 1.17
- ☐ Applicant claims small entity status. See 37 CFR 1.27
2. ☐ Payment Enclosed:
- ☒ Check ☐ Credit card ☐ Money Order ☐ Other

## FEE CALCULATION

### 1. BASIC FILING FEE

Large Entity Fee Code	Small Entity Fee Code	Fee (\$)	Fee Description	Fee Paid
101	201	740	Utility filing fee	
106	206	330	Design filing fee	
107	207	510	Plant filing fee	
108	208	740	Reissue filing fee	
114	214	160	Provisional filing fee	160

SUBTOTAL (1)

(\$ 160

### 2. EXTRA CLAIM FEES

Total Claims	Extra Claims	Fee from below	Fee Paid
20 **	0	X	0
Independent Claims	0	X	0
Multiple Dependent	0	X	0

Large Entity Fee Code	Small Entity Fee Code	Fee (\$)	Fee Description
103	203	18	Claims in excess of 20
102	202	84	Independent claims in excess of 3
104	204	280	Multiple dependent claim, if not paid
109	209	84	** Reissue independent claims over original patent
110	210	18	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2)

(\$ 0

\*\*or number previously paid, if greater; For Reissues, see above

## FEE CALCULATION (continued)

### 3. ADDITIONAL FEES

Large Entity Fee Code	Small Entity Fee Code	Fee (\$)	Fee Description	Fee Paid
105	205	130	Surcharge - late filing fee or oath	
127	227	50	Surcharge - late provisional filing fee or cover sheet	
139	139	130	Non-English specification	
147	147	2,520	For filing a request for reexamination	
112	112	920*	Requesting publication of SIR prior to Examiner action	
113	113	1,840*	Requesting publication of SIR after Examiner action	
115	215	110	Extension for reply within first month	
116	216	400	Extension for reply within second month	
117	217	920	Extension for reply within third month	
118	218	1,440	Extension for reply within fourth month	
128	228	1,960	Extension for reply within fifth month	
119	219	320	Notice of Appeal	
120	220	320	Filing a brief in support of an appeal	
121	221	280	Request for oral hearing	
138	138	1,510	Petition to institute a public use proceeding	
140	240	110	Petition to revive - unavoidable	
141	241	1,280	Petition to revive - unintentional	
142	242	1,280	Utility issue fee (or reissue)	
143	243	460	Design issue fee	
144	244	620	Plant issue fee	
122	122	130	Petitions to the Commissioner	
123	123	50	Processing fee under 37 CFR 1.17 (q)	
126	126	180	Submission of Information Disclosure Stmt	
581	581	40	Recording each patent assignment per property (times number of properties)	
146	246	740	Filing a submission after final rejection (37 CFR § 1.129(a))	
149	249	740	For each additional invention to be examined (37 CFR § 1.129(b))	
179	279	740	Request for Continued Examination (RCE)	
169	169	900	Request for expedited examination of a design application	

Other fee (specify) \_\_\_\_\_

\*Reduced by Basic Filing Fee Paid

SUBTOTAL (3)

(\$ 0

## SUBMITTED BY

Complete (if applicable)

Name (Print/Type)	Francis A. Davenport	Registration No. Attorney/Agent)	36,316	Telephone	609-734-6805
Signature	Francis A. Davenport	Date	09/15/03		

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## BROADCAST ROUTER WITH MULTIPLE EXPANSION CAPABILITIES

Broadcast router configurations can vary widely, for example, it can require few inputs and but many outputs, many inputs and few outputs, or approximately equal inputs and outputs. Linearly expandable routers allow users to start with a smaller router and enlarge it later by adding more chassis and connecting the chassis. Supporting a wide range of differences between number of inputs and outputs and linear expansion will result in configurations where large portions of the chassis are empty. The advantageous architecture disclosed herein allows for more optimal use of the chassis in various configurations.

A novel architecture for a broadcast router chassis allows the same chassis to be used for two different linearly expandable router systems. In the first system, the chassis supports the same number of input and output cards per chassis. A signal chassis is a viable system and the system can grow one chassis at a time. In the second system, a chassis holds either input or output cards but not both. Thus, two chassis are required to make a system. Systems containing more input chassis than output chassis are supported as are a system with more output chassis than input chassis. The second system can be used to build larger systems, from the same chassis with the same number of expansion ports.

FIGURE 1 is a block diagram representing the functional structure of the chassis. The inclusion of TDM data paths to and from each slot to the matrix/expansion slot is new and not known in prior broadcast routers. In addition to transferring data, these TDM data paths may also be used for transferring commands, status, and system health monitoring information throughout the chassis. FIGURE 3 is an example of a full configuration in system of FIGURE 1.

FIGURE 2 depicts an alternate structure which allows for redundant matrix, expansion operations and link.

FIGURE 3 is an example of a full configuration in the system of FIGURE 1.

FIGURE 4 is an example of a full configuration in the system of FIGURE 2.

FIG. 1

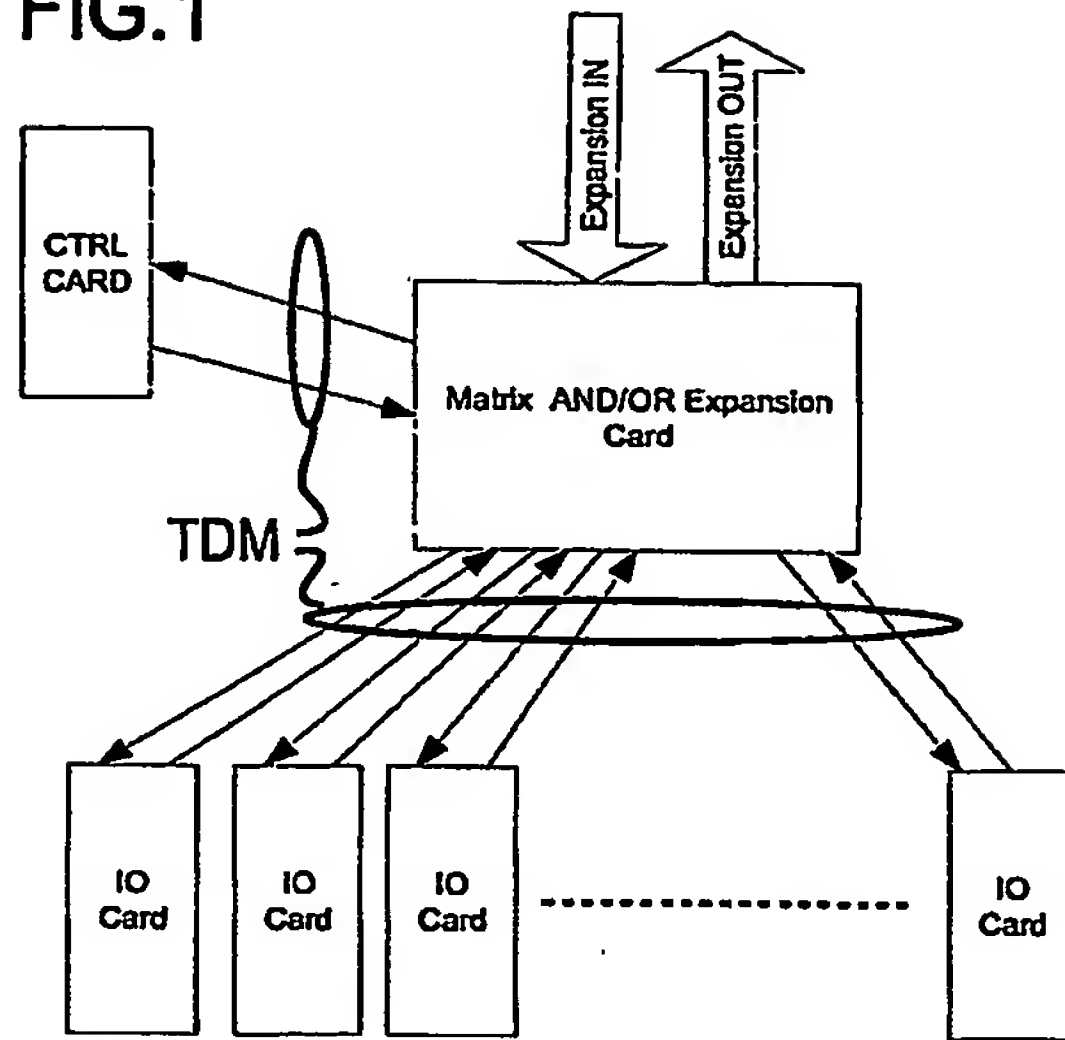


FIG. 2

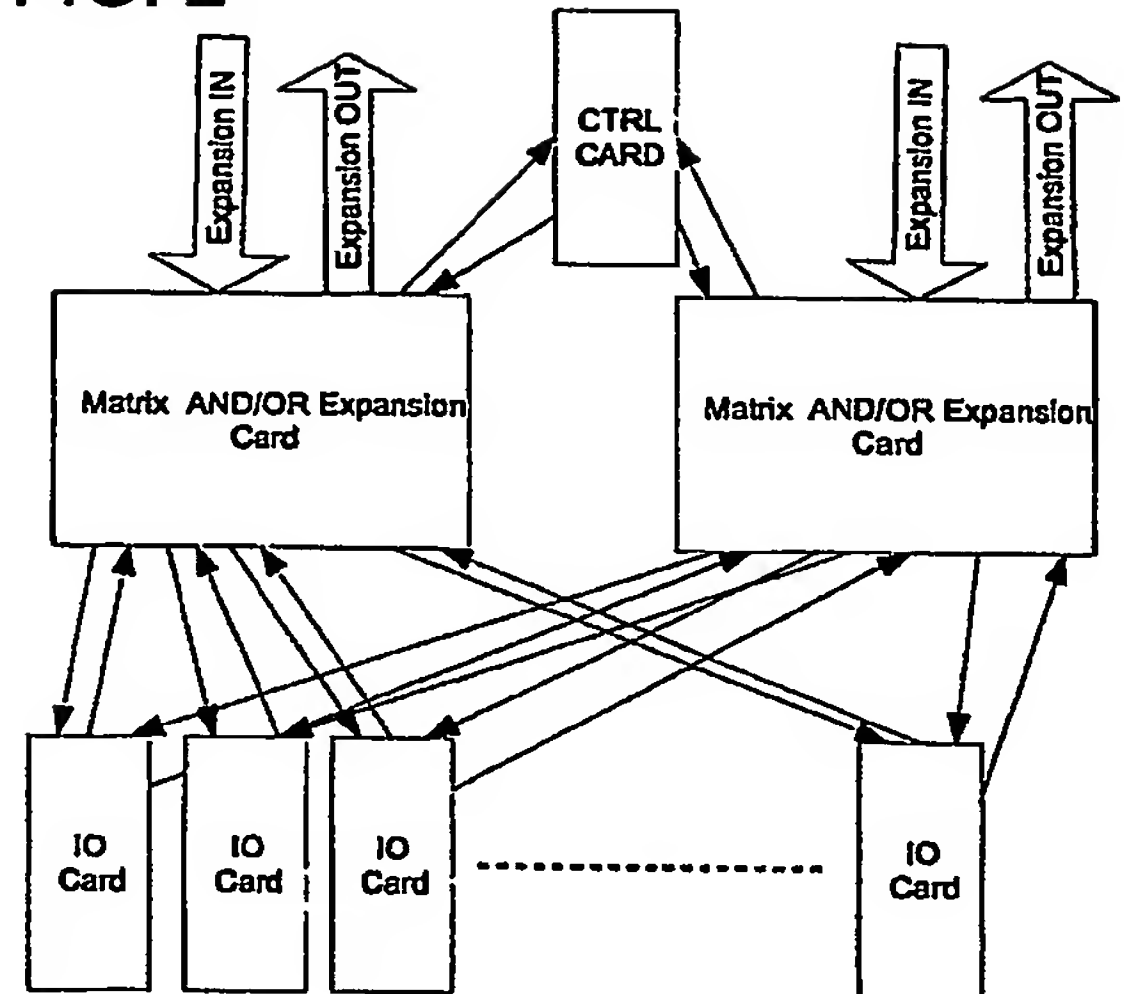


FIG. 3

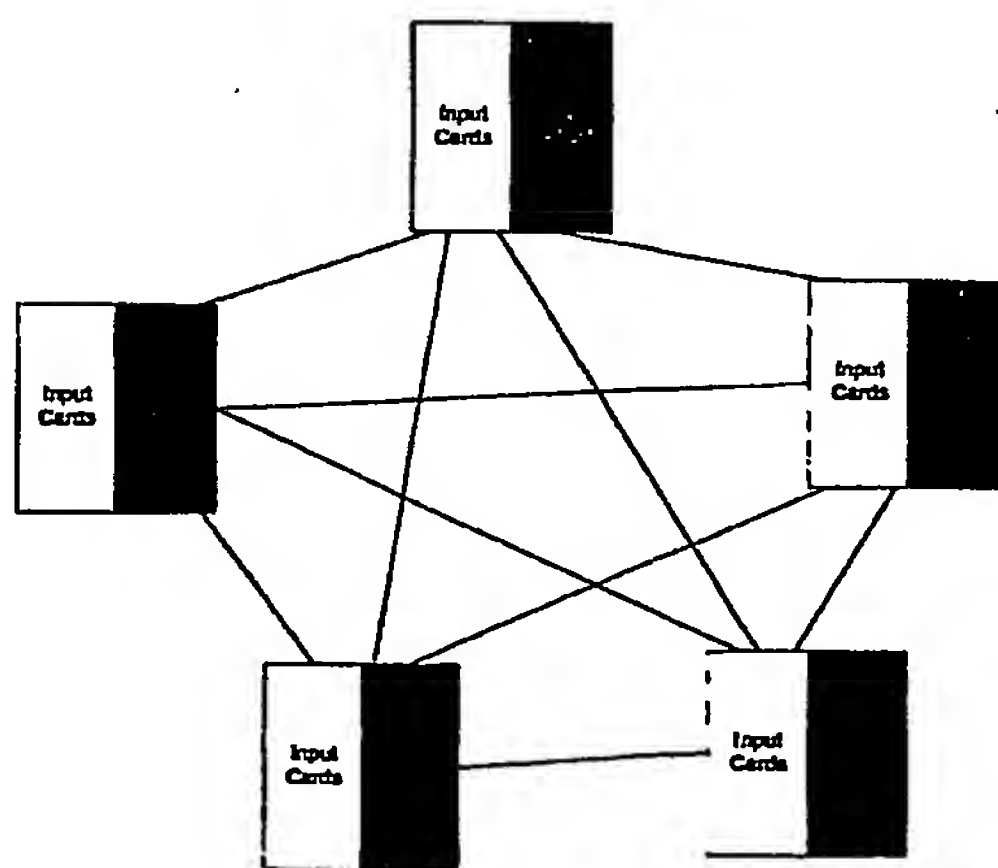
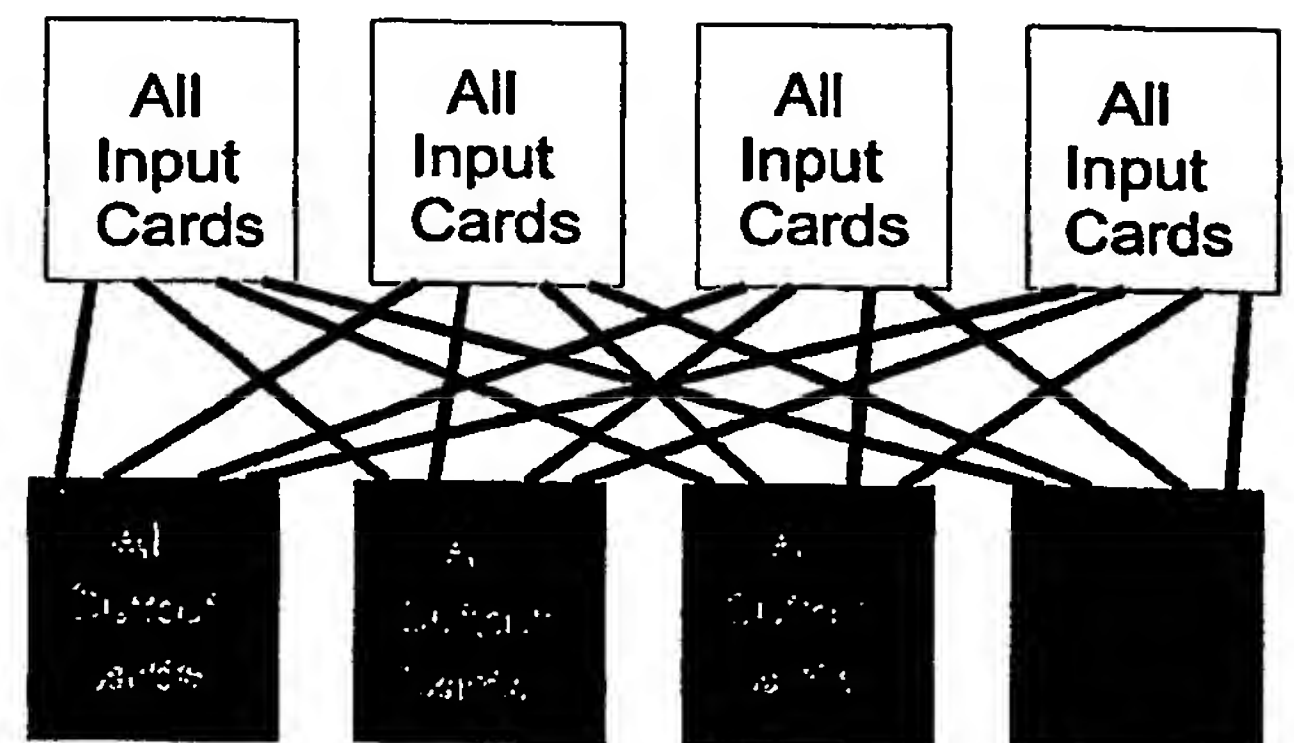


FIG. 4



PATENT APPLICATION SERIAL NO. \_\_\_\_\_

U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICE  
FEE RECORD SHEET

08/19/2003 SDENB081 00000023 070332 50495534  
01 FEE:100E 150.00 DR

PTO-1556  
(5/87)